
ULV, EC, and WP Malathion Use in California

Date: May 10, 2006

To: [Teung Chin](#)

From: [Rick Melnicoe](#)

Subject: Malathion Use in California

[Attachment 1](#)

[Attachment 2](#)

[Attachment 3](#)

Dear Teung,

Attached are the Malathion Tables with comments for CA.

Rick

Dear Teung,

Attached are tables for WP, EC and ULV uses of malathion. I have noted in yellow additions to the tables. I attached a letter from Schramm, Williams and Associates regarding use on carrots.

Rick

Table 1. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA for the EC, WP and Dust Formulations (updated April 4, 2006)

Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI*			Notes
						Current	Current EPA Proposed	Needed	
Alfalfa	Supported	1.25	2 per cutting	14	0	12 hours	24 hours		
	Average	1.0	1.4 per cutting	-	-				
	EPA proposed	1.25	2 per cutting	14	0				
Apricots	Supported	3.75	4	7	6	12 hours	4 days		2 uses in CA in 2002-4
	Average	1.4	1	-	-				
	EPA Proposed	1.5	2	7	6				
Asparagus	Supported	1.25	9	7	1	12 hours	24 hours		
	Average	1.25	2.1	7					
	EPA proposed	1.25	2	7	1				
Avocado	Supported	4.70	2	30	7	12 hours	5 days	2-3 days	Always spot treatments. Need to walk irrigation lines.
	Average	4.5	1.1	-	-				
	EPA proposed	CA: 4.7 FL: 4.7	2 1	30 -	7 7				
Barley	Supported	1.25	3	7	7	12 hours	24 hours		
	Average	0.8	1						
	EPA Proposed	1.25	2	7	7				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Beets, garden	Supported	1.25	5	7	7	12 hours	2 days	24 hr	From letter by Grower-Shipper Assoc of Central California (GSA)
	Average	2.1	1						
	EPA Proposed	1.25	3	7	7				
Blackberry	Supported	2.0	4	7	1	12 hours	2 days	24 hr	GSA
	Average	2.0	1.2	7	-				
	EPA Proposed	2.0	4	7	1				
Boysenberry	Supported	2.0	4	7	1	12 hours	4 days	24 hr	GSA
	Average	1.2	3	7					
	EPA proposed	2.0	2	7	1				
Broccoli	Supported	1.25	5	7	2	12 hours	3 days	24 hr	GSA
	Average	2.0	1	7					
	EPA Proposed	1.25	1	7	2				
Broccoli raab	Supported	1.25	5	7	2	12 hours	3 days	24 hr	GSA
	Average								
	EPA Proposed	1.25	1	-	2				
Broccoli, Chinese	Supported	1.25	5	7	2	12 hours	3 days	24 hr	GSA
	Average								
	EPA Proposed	1.25	1	-	2				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Brussels sprouts	Supported	1.25	4	7	2	12 hours	3 days	24 hr	GSA
	Average	1.4	1	7					
	EPA Proposed	1.25	1	-	2				
Cabbage	Supported	1.25	10	7	7	12 hours	3 days	24 hr	GSA
	Average	1.2	1.3	7					
	EPA proposed	1.25	2	7	7				
Cantaloupe	Supported	1.0	6	7	1	12 hours	2 days		OK
	Average	0.5	1		1				
	EPA Proposed	1.0	2	7	1				
Carrots	Supported	1.25	7	7	7	12 hours	2 days	2 days OK 24 hr better	See attached from Schramm, Williams & Associates
	Average	2.5	1.8	7	-				
	EPA Proposed	1.25	2	7	7				
Cauliflower	Supported	1.25	5	7	2	12 hours	3 days	24 hr	GSA
	Average	1.7	1	-	-				
	EPA Proposed	1.25	1	-	2				
Celery	Supported	1.5	2	7	?	12 hours	3 days	24 hr	GSA
	Average	1.5	1.4	7	-				
	EPA proposed	1.5	2	7	?				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Chayote root	Supported	1.56	2	7	0	12 hours	3 days		
	Average	1.56	1	?					
	EPA proposed	1.56	2	7	0				
Chayote fruit	Supported	1.88	3	7	1	12 hours	3 days		
	Average	1.75	2	7					
	EPA proposed	1.75	2	7	1				
Cherries (sweet)	Supported	3.75	6	7	3	12 hours	3 days	24 hr	GSA
	Average	2.0	3.1	7					
	EPA proposed	1.75	4	7	3				
Cherries (tart)	Supported	3.75	6	7	3	12 hours	3 days		
	Average	2.0	3.1	7					
	EPA proposed	1.75	4	7	3				
Chestnut	Supported	5.0	4	7	2	12 hours	4 days		Proposed rates derived from other nut crops.
	Average								
	EPA proposed	2.5	3	7	2				
Chinese greens (Chinese cabbage)	Supported	1.25	10	7	7	12 hours	3 days	24 hr	GSA
	Average								
	EPA Proposed	1.25	2	7	7				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Clover	Supported	1.25	2 per cutting	14	0	12 hours	24 hours		EPA requests information on typical number of cuttings per year, or alternatively typical number of crops per year.
	Average			14	0				
	EPA Proposed	1.25	2 per cutting	14	0				
Collards	Supported	1.25	10	7	7	12 hours	2 days	24 hr	GSA
	Average	1.25	6	7	5				
	EPA Proposed	1.25	3	7	7				
Corn, field	Supported	1.25	3	7	7	12 hours	6 days for detassling and hand harvesting 24 hours day for all other activities		
	Average	1	1.2	3	5				
	EPA Proposed	1.0	2	7	7				
Corn, sweet	Supported	1.25	5	5	5	12 hours	6 days for detassling and hand harvesting 24 hours for all other activities	5 days for hand-harvest	GSA
	Average								
	EPA Proposed	1.0	2	7	5				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Cucumber	Supported	1.88	3	7	1	12 hours	3 days	24 hr	GSA
	Average	1.1	1.4	7	1				
	EPA Proposed	1.75	2	7	1				
Dandelion	Supported					12 hours	3 days		
	Average								
	EPA Proposed	1.25	2	7	7				
Dates	Supported	4.25	6	7	?	12 hours	3 days		A 3 day REI is OK only if irrigators are allowed in. The foliage is high above them and they would not be in contact. A 7 day PHI is OK
	Average	2.5	2	7					
	EPA Proposed	2.75	3	7	7				
Dewberry	Supported	2.0	4	7	1	12 hours	2 days		
	Average								
	EPA Proposed	2.0	2	7	1				
Eggplant	Supported	3.43	5	5	3	12 hours	3 days		
		1.56	5	5	1				
	Average	1.6	1	5	3				
	EPA Proposed	1.56	4	7	3				
Eggplant, oriental	Supported	3.43	5	5	3	12 hours	3 days		
	Average	1.56	5	5	1				

Table 1. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA for the EC, WP and Dust Formulations (updated April 4, 2006)

	EPA Proposed	1.56	4	7	3				
Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Endive (escarole)	Supported					12 hours	3 days	24 hr	GSA
	Average								
	EPA Proposed	1.25	2	7	7				
Figs	Supported	2.5	3	5	5	12 hours	3 days		REI OK
	Average	2.0	1	5					
	EPA Proposed	2.0	2	5	5				
Flax	Supported	0.5	1	N/A	52 (?)	12 hours	12 hours		EPA requests information on typical Preharvest Interval for flax
	Average	1.0	1						
	EPA Proposed	0.5	1		52 (?)				
Garlic	Supported	1.56	5	7	3	12 hours	3 days		Acceptable
	Average	1.8	2.1	7	-				
	EPA Proposed	1.56	3	7	3				
Grain crops	Supported								EPA requests additional information on types of grain crops treated with malathion, and typical application rates.
	Average								
	EPA Proposed								

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Grain elevators	Supported								EPA requests information on typical application rates and typical application practices.
	Average	0.4	1						
	EPA Proposed								
Grains, stored (Includes barley, corn, oats, rye and wheat)	Supported	Supported	Loading: 0.624 lbs ai/1000 bushels Storage: 0.312 lbs ai/100 bushels	3 per storage period	60				Dust formulation only EPA requests information on typical application rates and application practices for stored grains. 1 application of the 57 EC is usually made to empty grain bin prior to treatment with dust
	Average								
	EPA Proposed								
Grapefruit	Supported	6.25	3	30	7	12 hours	5 days		Typical rates reported for grapefruit may reflect ULV formulation rates. EPA requests typical application rates (EC, WP formulations) if these are different than what is reported here.
	Average	0.5	3.7	-	-				
	EPA Proposed	0.75	3	30	7				

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Supported Crop		Maximum Single Application Rate (1b a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Grapes, raisin, table, wine	Supported	1.88	2	14	3	12 hours	5 days	2 days	California Grape & Tree Fruit League to Teung Chin
	Average	2.2	1.4	14					
	EPA Proposed	1.88	2	14	3				
Grasses, Bermuda, forage	Supported	1.25	1	-	0	12 hours	24 hours		
	Average								
	EPA Proposed	1.25	1	-	0				
Guava	Supported	1.25	13	3	2	12 hours	2 days		Typical application information is also being generated by Univ. of Hawaii.
	Average								
	EPA Proposed				2				
Hay, other	Supported					12 hours	24 hours		EPA requests additional information on typical application rates on malathion applications to hay.
	Average	2.0 CA	2.0 CA						
	EPA Proposed								
Hops	Supported	0.63	3	7	10	12 hours	12 hr		
	Average								
	EPA Proposed	0.63	3	7	10				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Horseradish	Supported	1.25	5	7	7	12 hours	2 days		No use in CA in 2002-4
	Average	1.25	3	7	7				
	EPA Proposed	1.25	3	7	7				
Kale	Supported	1.25	10	7	7	12 hours	2 days	24 hr	GSA
	Average	1.9	1.7	7	-				
	EPA Proposed	1.25	3	7	2				
Kohlrabi	Supported	1.25	10	7	7	12 hours	3 days		
	Average	1.25		7	7				
	EPA Proposed	1.25	2	7	7				
Kumquats	Supported	6.25	3	30	7	12 hours	5 days		EPA requests additional information on typical malathion rates applied to kumquats. EPA proposed values are based upon typical rates reported for oranges (citrus) and may reflect ULV formulation rates, not EC, WP formulation rates.
	Average								
	EPA Proposed	0.75	2	30	7				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current PA Proposed	Needed	
Leeks	Supported	1.56	5	7	3	12 hours	3 days	24 hr	GSA
	Average								
	EPA Proposed	1.56	2	7	3				
Lemons	Supported	6.25	3	30	7	12 hours	5 days	3 days	GSA
	Average	1.2	1	30	7				
	EPA Proposed	0.75	2	30	7				
Lespedeza	Supported	1.25	2 per cutting	14	0	12 hours	24 hours		EPA requests additional information on the typical number of cuttings per year.
	Average								
	EPA Proposed	1.25	2 per cutting	14					
Lettuce, head	Supported	1.88	6	6	14	12 hours	3 days	24 hr	GSA
	Average	2.0	1.1	7	-				
	EPA Proposed	1.88	2	6	14				
Lettuce, leaf	Supported	1.88	6	5	14	12 hours	3 days	24 hr	GSA
	Average	2.0	1.1	7	-				
	EPA Proposed	1.88	2	5	14				
Limes	Supported	6.25	3	30	7	12 hours	5 days	3 days	GSA
	Average	1.4	1	30	7				
	EPA Proposed	1.4	1	30	7				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current PA Proposed	Needed	
Loganberry	Supported	2.0	4	7	1	12 hours	24 hours		
	Average	2.0	4	7					
	EPA Proposed	2.0	2	7	1				
Macadamia nut	Supported	0.94	7	7	1	12 hours	24 hours		
	Average								
	EPA Proposed	0.94	2	7	1				
Mango	Supported	1.25	8	7	1	12 hours	2 days		Typical malathion use information on mango is also being generated by Univ. of Hawaii
	Average								
	EPA Proposed	tbd	tbd	tbd	1				
Melons: Cantaloupe, water and honeydew	Supported	1.0	6	7	1	12 hours	2 days	24 hr	GSA. 2 days OK for cantaloupe
	Average	0.9	1	7	1				
	EPA Proposed	1.0	2	7	1				
Mint	Supported	0.94	3	7	7	12 hours	2 days		
	Average								
	EPA Proposed	0.94	3	7	7				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Mushrooms	Supported	1.7	4	3	1	12 hours	(..?..)		
	Average								
	EPA Proposed	tbd	tbd	tbd	1				
Mustard greens	Supported	1.25	6	3	7	12 hours	2 days		
		2.50	3	7	7				
	Average	1.25	6	7	5				
	EPA Proposed	1.25	3	7	7				
Nectarines	Supported	3.75	4	7	7	12 hours	4 days		EPA notes that typical rates to nectarines is greater than the supported rate. EPA requests information on potential impact if application rate is lowered to the proposed values.
	Average	9.0	1.4	14	7				
	EPA Proposed	3.0	3	7	7				
Nuts	Supported	2.5	3	7	7	12 hours	4 days		
	Average								
	EPA Proposed	2.5	3	7	7				
Oats	Supported	1.25	3	7	7	12 hours	24 hours		
	Average	1.1	1		7				
	EPA Proposed	1	2	7	7				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Okra	Supported	1.5	6	7	1	12 hours	24 hour		EPA proposes to remove aerial application to Okra. Please provide information on the necessity of aerial application for application of malathion to okra.
	Average	1.2	4.8	7	-				
	EPA Proposed	1.2	5	7	1				
Onions, bulb	Supported	1.56	6	7	3	12 hours	3 days		Acceptable
	Average	1.2	1.5	7	-				
	EPA Proposed	1.56	2	7	3				
Onions, green	Supported	1.56	6	7	3	12 hours	3 days	24 hr	GSA
	Average								
	EPA Proposed	1.56	2	7	3				
Oranges	Supported	6.25	3	30	7	12 hours	5 days		No ULV use on citrus in CA See Grafton-Cardwell letter
	Average	0.6	1.2	30	7				
	EPA Proposed	0.75	2	30	7				
Papaya	Supported	1.25	13	3	1	12 hours	2 days		Typical information from Univ. of Hawaii is being generated.
	Average								
	EPA Proposed	tbd	tbd	tbd	1				
Supported Crop		Maximum Single	Maximum Number of	Minimum Application	Minimum Pre-	REI			Notes

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		Application Rate (lb a.i./A)	Applications per Year	Interval (days)	Harvest Interval (days)	Current	Current EPA Proposed	Needed	
Parsley	Supported	1.5	2	7	2 or 7	12 hours	3 days	24 hr	EPA request information on typical PHI. PHI reported here reflects PHI for related crops, broccoli, and cabbage/mustard greens respectively.
	Average								
	EPA Proposed	1.5	2	7					
Parsnip	Supported	1.25	5	7	7	12 hours	2 days	24 hr	GSA
	Average								
	EPA Proposed	1.25	3	7	7				
Passion fruit	Supported	1.25	8	7	3	12 hours	2 days		Typical application information is also being generated by Univ. of Hawaii.
	Average								
	EPA Proposed	tbd	tbd	tbd	3				
Pasture and rangeland	Supported	0.9375	2		1	12 hours	(..?)		EPA requests information on typical uses of malathion for "pasture and rangeland" which is other than the APHIS sponsored Grasshopper, Mormon cricket Program
	Average	1.25 CA	1.0 CA						
	EPA Proposed	0.62	1		1				
Supported Crop		Maximum Single	Maximum Number of	Minimum Application	Minimum Pre-		REI		Notes

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		Application Rate (lb a.i./A)	Applications per Year	Interval (days)	Harvest Interval (days)	Current	Current EPA Proposed	Needed	
Peaches	Supported	3.75	5	11	7	12 hours	4 days		
	Average	3.8	2.4	-	7				
	EPA Proposed	3.0	3	7	7				
Pears	Supported	1.25	5	7	1	12 hours	2 days		
	Average	1.7	2	7	1				
	EPA Proposed	1.25	2	7	1				
Peas, green	Supported	2.5	5	7	3	12 hours	3 days	24 hr	GSA
	Average	1.0	1	7	3				
	EPA Proposed	1.0	2	7	3				
Peas, succulent	Supported	2.5	5	7	3	12 hours	3 days	24 hr	GSA
	Average								
	EPA Proposed	1.0	2	7	3				
Pecans	Supported	2.5	3	7	7	12 hours	3 days		EPA proposes to remove aerial application to pecan. EPA requests information on the necessity of aerial application for malathion use on pecans.
	Average	2.7	1.6						
	EPA Proposed	2.5	2	7	7				
Peppers	Supported	1.56	5	5	3	12 hours	24 hours		
	Average	1.1	1	5	3				
	EPA Proposed	1.56	2	5	3				
Supported Crop		Maximum Single	Maximum Number of	Minimum Application	Minimum Pre-	REI		Notes	

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		Application Rate (lb a.i./A)	Applications per Year	Interval (days)	Harvest Interval (days)	Current	Current EPA Proposed	Needed	
Pineapple	Supported	5.0	3	7	7	12 hours	12 hours		
	Average								
	EPA Proposed	2.0	3	7	7				
Potatoes	Supported	1.56	2	7	0	12 hours	3 days		
	Average	0.9	1	7	0				
	EPA Proposed	1.56	2	7	0				
Pumpkins	Supported	1.0	6	7	1	12 hours	2 days	24 hr	GSA
	Average	1.4	1.2	7					
	EPA Proposed	1.0	2	7	1				
Radishes	Supported	1.25	5	7	7	12 hours	2 days	24 hr	GSA
	Average	1.3	1		7				
	EPA Proposed	1.25	3	7	7				
Raspberry	Supported	2.0	4	7	1	12 hours	24 hours		
	Average	2.0	1.1	7	-				
	EPA Proposed	2.0	2	7	1				
Rice	Supported	1.25	3	7	7	12 hours	24 hours		EPA wants all labels to specify a 7 day holding time EPA requests additional information on a 7 day required holding time.
	Average	0.6	1		7				
	EPA proposed	1.25	2	7	7				
Supported Crop		Maximum Single	Maximum Number of	Minimum Application	Minimum Pre-	REI		Notes	

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		Application Rate (lb a.i./A)	Applications per Year	Interval (days)	Harvest Interval (days)	Current	Current EPA Proposed	Needed	
Rutabagas	Supported	1.25	5	7	7	12 hours	2 days		
	Average			7	3				
	EPA proposed	1.25	3	7	7				
Rye	Supported	1.25	3	7	7	12 hours	24 hour		
	Average								
	EPA Proposed	1.0	2	7	7				
Salsify	Supported	1.25	5	7	7	12 hours	2 days		
	Average								
	EPA Proposed	1.25	3	7	7				
Shallots	Supported	1.56	5	7	3	12 hours	3 days	24 hr	GSA
	Average								
	EPA Proposed	1.56	2	7	3				
Spinach	Supported	2.0	3	7	7	12 hours	3 days	24 hr	EPA proposes to remove aerial uses EPA requests information on the necessity of aerial application for malathion use on spinach. GSA
	Average	1.6	1.2	?	7				
	EPA proposed	2.0	2	7	7				
Squash, summer	Supported	1.88	3	7	1	12 hours	3 days	24 hr	GSA
	Average	2.0	1.2	7	7				
	EPA proposed	1.75	3	7	1				

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Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Squash, winter	Supported	1.0	6	7	1	12 hours	2 days	24 hr	GSA
	Average	2.0	1.2	7	7				
	EPA proposed	1.0	3	7	1				
Strawberry	Supported	2.0	6	7	3	12 hours	12 hours		EPA proposed to remove aerial application EPA requests information on the necessity of aerial application for malathion use on spinach.
	Average	2.0	3.4	7	-				
	EPA Proposed	2.0	4	7	3				
Sweet potatoes	Supported	1.56	2	7	0	12 hours	3 days		
	Average			7					
	EPA proposed	1.56	2	7	0				
Swiss chard	Supported	1.5	2	7		12 hours	3 days	24 hr	Swiss chard is part of the Leafy Vegetables (except Brassica) group for which data on the representative crop, celery, is missing. EPA requests typical information on PHI. Similar crop, lettuce has a 14 day PHI GSA
	Average								
	EPA proposed	1.5	2	7					

Table 1. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA for the EC, WP and Dust Formulations (updated April 4, 2006)

Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Tangelos	Supported	6.25	3	30	7	12 hours	5 days		This crop is supported by data on oranges therefore the supported use pattern is based on oranges. Additional information on typical application rates is requested as the reported typical rate may reflect ULV application, and not EC, WP applications.
	Average								
	EPA proposed	0.75	2	30	7				
Tangerines	Supported	6.25	3	30	7	12 hours	5 days		This crop is supported on data for oranges therefore the supported use pattern in based on oranges. Additional information on typical application rates is requested as the reported typical rate may reflect ULV application, and not EC, WP applications.
	Average								
	EPA proposed	0.75	2	30	7				
Tomatillo	Supported	3.43	5	5	3	12 hours	2 days		This crop is supported by data for tomato
		1.56	5	5	1				
	Average	1.2	3.3	?					
	EPA proposed	1.56	4	5	3/1				

Table 1. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA for the EC, WP and Dust Formulations (updated April 4, 2006)

Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	Current EPA Proposed	Needed	
Tomatoes	Supported	3.43	5	5	3	12 hours	2 days	2 days OK	Aerial not needed on fresh tomatoes. Desirable to keep aerial on processing.
		1.56	5	5	1				
	Average	1.2	1 – 3	5	3				
	EPA proposed	1.56	4	5	1				
Turnips	Supported	1.25	5	7	7	12 hours	2 days		
	Average			7	7				
	EPA proposed	1.25	3	7	7				
Walnuts	Supported	2.5	3	7	7	12 hours	3 days		
	Average	3.8	1	7					
	EPA Proposed	2.5	3	7	7				
Watercress	Supported	1.25	5	3	3	12 hours	2 days		
	Average								
	EPA proposed	1.25	3	7	3				
Watermelons	Supported	1.0	6	7	1	12 hours	2 days		
	Average	1.6	1.4	7	1				
	EPA proposed	1.0	2	7	1				
Supported Crop		Maximum Single	Maximum Number of	Minimum Application	Minimum Pre-	REI			Notes

Table 1. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA for the EC, WP and Dust Formulations (updated April 4, 2006)

		Application Rate (lb a.i./A)	Applications per Year	Interval (days)	Harvest Interval (days)	Current	Current EPA Proposed	Needed	
Wheat, spring	Supported	1.25	3	7	7	12 hours	24 hour		
	Average	0.7	1.0	7	7				
	EPA proposed	1.0	2	7	7				
Wheat , winter	Supported	1.25	3	7	7	12 hours	24 hour		
	Average	0.7	1.0	7	7				
	EPA proposed	1.0	2	7	7				
Wild rice	Supported	1.25	3	7	7	12 hours	24 hour		EPA proposes all labels to specify a 7 day holding time for rice. EPA requests additional information on a 7 day required holding time.
	Average	0.4	1						
	EPA proposed	1.25	2	7	7				
Yams	Supported	1.56	2	7	0	12 hours	3 days		No use in CA in 2002. 4
	Average								
	EPA proposed	1.56	2	7					

Table 2. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA For the ULV and RTU Formulations

(updated May 5, 2006)

FOR ALL CROPS TO WHICH THE OIL-BASED ULV PRODUCT IS APPLIED:

Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	EPA Proposed	Needed	
Alfalfa	Supported	0.61	2 per cutting	14	0	12 hours	12 hr	12 hr	Five uses of ULV in CA in 2002-4.
	Average								
	EPA proposed	0.61	2 per cutting	14	0				
Barley	Supported	0.61	3	7	7	12 hours	12 hr	12 hr	No ULV use in CA
	Average								
	EPA Proposed	0.61	2	7	7				
Beans, dry, Lima	Supported	0.61	3	7	1	12 hours	24 hr for hand harvesting 12 hr for all other activities		No ULV use in CA.
	Average								
	EPA Proposed	0.61	2	7	1				
Beans, snap	Supported	0.61	3	7	1	12 hours	24 hr for hand harvesting 12 hr for all other activities		One use of ULV in CA in 2002-4.
	Average								
	EPA Proposed	0.61	2	7	1				

Table 2. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA For the ULV and RTU Formulations

(updated May 5, 2006)

Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	EPA Proposed	Needed	
ULV Formulation for Blueberry, high-bush and low-bush	Supported	0.77	5	10	1	12 hours	12 hr		Since blueberries was omitted from the EC/WP table, EPA request that information on the EC/WP formulation on blueberries.
	Average	-	-	-	-				
	EPA Proposed	0.77	3	10	1				
EC/WP Formulation for Blueberry, high-bush and low bush	Supported (data on two application scenarios has been submitted)	0.625	7	10	8 hr	12 hours	12 hr.		Data to support blueberries, for both formulations, is being reviewed. EPA requests information on whether aerial application to blueberry can be removed for the EC/WP formulation.
		1.25	4	4	1				
	Average	1.2	3	7	-				
	EPA Proposed	1.2	3	7	1				
Cherries (sweet)	Supported	1.22	6	7	1	12 hours	12 hr	12 hr	No ULV use in CA.
	Average								
	EPA Proposed	1.22	4	7	1				
Cherries (tart)	Supported	1.22	6	7	1	12 hours	12 hr		No ULV use in CA.
	Average								
	EPA proposed	1.22	4	7	1				

Table 2. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA For the ULV and RTU Formulations

(updated May 5, 2006)

Clover	Supported	0.61	2 per cutting	14	0	12 hours	12 hr		No ULV use in CA.
	Average			14	0				
	EPA Proposed	0.61	2 per cutting	14	0				
Corn, field	Supported	0.61	3	7	7	12 hours	4 day for detassling		No ULV use in CA.
	Average						12 hr for all other activities		
	EPA Proposed	0.61	2	7	7				
Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	EPA Proposed	Needed	
Corn, sweet	Supported	0.61	5	5	5	12 hours	4 day for detassling		No ULV use in CA.
	Average						12 hr for all other activities		
	EPA Proposed	0.61	2	5	5				
Grapefruit	Supported	0.175	10	7	1	12 hours	12 hr		Rates listed here are for conventional use and is not applicable to the 24C use of malathion on grapefruit to control fruit fly. No ULV use in CA.
	Average								
	EPA Proposed	0.175	3	7	1				
Grasses, Bermuda, forage	Supported	0.92	1 per cutting	N/A	0	12 hours	1 day		EPA requests additional information on
	Average								
	EPA Proposed	0.92	1 per cutting	-	0				

Table 2. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA For the ULV and RTU Formulations

(updated May 5, 2006)

									whether hand weeding occurs as an activity associated with grasses grown for forage or hay. No ULV use in CA.
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Kumquats	Supported	0.175	10	7	1	12 hours	12 hr		Rates listed here are for conventional use and is not applicable to the 24C use of malathion on kumquats to control fruit fly. No ULV use in CA.
	Average								
	EPA Proposed	0.175	2	7	1				

Supported Crop		Maximum Single Application Rate (1b a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	EPA Proposed	Needed	

Lemons	Supported	0.175	10	7	1	12 hours	12 hr		Rates listed here are for conventional use and is not applicable to the 24C use of malathion on lemons to control fruit fly. No ULV use in CA.
	Average								
	EPA Proposed	0.175	2	7	1				

Lespedeza	Supported	0.61	2/cutting	14	0	12 hours	12 hr		No ULV use in CA.
	Average								
	EPA Proposed	0.61	2/cutting	14	0				

Limes	Supported	0.175	10	7	1	12 hours	12 hr		Rates listed here are for conventional use and is not applicable
	Average								
		0.175	1	-	1				

Table 2. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA For the ULV and RTU Formulations

(updated May 5, 2006)

	EPA Proposed								to the 24C use of malathion on limes to control fruit fly. No ULV use in CA.
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Lupine	Supported	0.61	3	7	1	12 hours	12 hr		No ULV use in CA.
	Average								
	EPA Proposed	0.61	1	-	1				

Oats	Supported	0.61	3	7	7	12 hours	12 hr		No ULV use in CA.
	Average	1.1	1		7				
	EPA Proposed	0.61	2	7	7				

Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	EPA Proposed	Needed	

Oranges	Supported	0.175	10	7	1	12 hours	12 hr		Rates listed here are for conventional use and is not applicable to the 24C use of malathion on oranges to control fruit fly. No ULV use in CA.
	Average	0.6	1.2		7				
	EPA Proposed	0.75	2	7	7				

Rice	Supported	0.61	3	7	14	12 hours	12 hr		No ULV use in CA.
	Average								
	EPA proposed	0.61	2	7	14				

Table 2. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA For the ULV and RTU Formulations

(updated May 5, 2006)

Rye	Supported	0.61	3	7	7	12 hours	12 hr		No ULV use in CA.
	Average								
	EPA Proposed	1.0	1	-	7				

Sorghum	Supported	0.61	3	7	7	12 hours	12 hr		No ULV use in CA.
	Average	0.61	1						
	EPA Proposed	0.61	2	7	7				

Tangelos	Supported	0.175	10	7	1	12 hours	12 hr		Rates listed here are for conventional use and is not applicable to the 24C use of malathion on tangelos to control fruit fly. No ULV use in CA.
	Average								
	EPA proposed	0.175	2	7	1				

Supported Crop		Maximum Single Application Rate (lb a.i./A)	Maximum Number of Applications per Year	Minimum Application Interval (days)	Minimum Pre-Harvest Interval (days)	REI			Notes
						Current	EPA Proposed	Needed	

Tangerines	Supported	0.175	10	7	1	12 hours	12 hr		Rates listed here are for conventional use and is not applicable to the 24C use of malathion on tangerines to control fruit fly. No ULV use in CA.
	Average								
	EPA proposed	0.175	2	7	1				

Vetch	Supported	0.61	2	14	0	12 hours	12 hr		No ULV use in CA.
	Average								

Table 2. Malathion: Supported Maximum and Typical Use Patterns Compared to Changes Proposed by EPA For the ULV and RTU Formulations

(updated May 5, 2006)

	EPA Proposed	0.61	2	14	0				
Wheat, spring	Supported	0.61	3	7	7	12 hours	12 hr		No ULV use in CA.
	Average								
	EPA proposed	0.61	2	7	7				
Wheat, winter	Supported	0.61	3	7	7	12 hours	12 hr		No ULV use in CA.
	Average								
	EPA proposed	0.61	2	7	7				
Wild rice	Supported	0.61	3	7	14	12 hours	12 hr		No ULV use in CA.
	Average								
	EPA proposed	0.61	2	7	14				

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FAX TRANSMISSION: 1 Page

May 4, 2006

TO: Ann Pingitore

FROM:

RE: Malathion Use Questionnaire

1. Which malathion products are used on your crop?

CLEAN CROP MALATHION 8 AQUAMUL (34704- 474-AA)

CLEAN CROP MALATHION 8-E INSECTICIDE (34704- 452-AA)

GOWAN MALATHION 8 (10163- 21-ZA)

GOWAN MALATHION 8 FLOWABLE (10163- 21-ZB)

MALATHION 8 AQUAMUL (34704- 474-ZA)

Malathion is not a mainstay item, but its use may be preferable to Diazinon. Aquamul formulations are generally preferred because the lack the smell associated with emulsifiable concentrations.

2. Do the "EPA Proposed" Application Values (see Attachment A) support your malathion needs? **No**

If not:

a. What application rates do you need for your crop? **We need a 2 pt/A rate**

b. Why do you need an application rate other than that which EPA proposes? **This material is used mainly for leafhoppers which are more difficult to control than aphids and whitefly. Reducing the rate to 1.25 pts may require follow-up applications.**

c. How often do you need application values other than that being proposed by EPA?

3. How many malathion applications are used/needed per year? Is the proposed number of applications adequate (see Attachment A)? **Two applications (assuming that the rate is not reduced below 2 pts/A)**

4. What is the minimum number of days between applications? Is the proposed number adequate (see Attachment A)? **Seven day interval is OK**

5. What is the Pre-harvest interval (PHI) for your crop? **7 days.** Is the proposed PHI adequate (see Attachment A)? **Yes**

6. Does the “Current EPA Proposed” REI interfere with the typical cultural practices for your crop (see Attachment A)? No. There are very few worker activities going on in carrots at that stage of growth. E.g., no handling of the treated foliage. Most irrigation is solid set aluminum pipe set up at the beginning of crop cycle (Imperial County being the exception) and left in the field. Therefore, exposure of irrigators to malathion is virtually nonexistent.

If so:

- a. How or why does the “Current EPA Proposed” REI interfere with cultural practices? There may be some mechanical cultivation required [behind] a ground application of Malathion. Because we must dry down a field to allow for mechanical traffic, there are times when we may unintentionally stress a crop while waiting to get back into a field.
- b. What is an acceptable REI for that crop? 1 day.